

JUL 28 2008

Attorney Docketing No. 102123-200
1 of 4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Indulis Gruzins Donald Farrell McElheney Robert C. Hire Jerry Douglas Necessary Joseph T. Farrell	Docket:	102123-200
Serial No.:	09/996,480	Art Unit:	1625
Filed:	November 20, 2001	Examiner:	Taylor V. Oh
Assignee:	Arch Chemicals, Inc.	Conf. No.	3615
Title:	POLYOLS CONTAINING CARBOXYL GROUPS AND PRODUCTION THEREOF		

REPLY BRIEF FOR INDULIS GRUZINS ET AL.

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Reply Brief is responsive to the Examiner's Answer mailed on May 28, 2008 in the above-identified application.

The Reply Brief is necessitated by new art presented by the Examiner in the Examiner's Answer, together with related argumentation.

Housel et al. discloses on column 8, lines 1-2 the use of minor amounts of catalysts in their process to prepare acid functional polyols. To support the position that this minor amounts of catalysts are acid catalysts, on page 8, the Examiner's Answer states that the term

CERTIFICATE OF MAILING OR TRANSMISSION (37 CFR 1.8(a))

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Date: July 28, 2008

Signed: 

Wanli Wu

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2 of 4

"catalysts" implies that any catalysts would work for the process and this may even include well-known acidic catalysts among the catalysts effective for the process. The Examiner's Answer then cites Advanced Organic Chemistry for the first time to show that acids are well known catalysts for the preparation of carboxylic esters and for the esterification of carboxylic acids with alcohols. Applicants respectfully disagree with the analysis.

The first reaction cited on page 8 of the Examiner's Answer, the reaction between a cyclic anhydride and a monoalcohol using acid catalyst to produce an ester having an acid pendant functional group is acknowledged. However, the cited reaction does not provide proper motivation to one skilled in the art to substitute the "minor amount of catalysts" in Housel et al. process with the acid catalyst disclosed by the example reaction because the problem presented in Housel et al. is different from the one presented in the cited reaction.

The cited reaction relates to the formation of an ester having an acid function group. The product of the cited reaction does not have any alcohol functional group. Therefore, there is no concern about what effect the presence of the acid catalyst will have to a product having both an alcohol and an acid functional group.

Contrary to the cited reaction, the starting material in Housel et al. is a polyol and the products of Housel et al. contain both at least one acid pendent group and one alcohol pendant group. If a catalyst that promotes the reaction of an acid group and an alcohol group is present in the reaction between a polyol and an anhydride, the reaction between a polyol and an anhydride will not stop at the stage of producing an ester having both alcohol and acid functional groups. Instead, an esterification reaction between the acid group and the alcohol group with the same molecule can occur and as a result the process will not produce a product having both at least an alcohol group and an acid group.

The second reaction cited by the Examiner's Answer on page 8 indicates that an acid catalyst promotes the esterification reaction between an acid and an alcohol, therefore, the cited portion of the textbook actually teaches away from employing an acid catalyst in the Housel et al. process because the utilization of an acid catalyst will produce a product that does not have both at least an alcohol and an acid functional group, which is contrary to the purpose of

U.S. Serial No. 09/996,480
Attorney Docketing No. 102123-200
3 of 4

Housel et al.. Accordingly, the cited portion of Advanced Organic Chemistry by Jerry March does not provide support that the minor amount of catalysts in Housel et al. are actually acid catalysts.

In response to Appellants's arguments, the Examiner Answer also states on page 9 that Housel et al. discloses the employment of tin metal oxide catalyst in the process of making a polymeric acid functional polyol and Koistinen et al. discloses the use of tin oxide and sulfuric acid, hydrochloric acid in a process to prepare complex polyol esters. The Examiner's Answer states further that both prior art have commonly dealt with the production of carboxy-containing compositions by reacting the polyols and the carboxylic acids and/or anhydrides and Housel has offered guidance that there is an equivalence regarding the use of the catalyst between hydrochloric acid and tin oxide. The Examiner's Answer alleges that accordingly, it would have been obvious to one skilled in the art to employ the hydrochloric acid catalyst of Koistinen et al. in the process of Housel et al. as an alternative to the tin oxide catalyst of Housel et al. Applicants respectfully disagree.

First, Housel et al. does not disclose the employment of tin metal oxide as a catalyst to produce acid functional polyols even in their process. On column 8, Housel et al. discloses that organotin catalyst may be used to control the reaction to prepare acid functional polyols. However, it is known to a person skilled in the art that an organo tin catalyst and a tin oxide catalyst are totally different compounds in terms of structure and functionality. Accordingly, the disclosure of organo tin is not equivalent to the disclosure of tin metal oxide.

Second, there is no motivation for a person skilled in the art to employ the acid catalysts disclosed in Koistinen et al. in the process disclosed in Housel et al. because doing so will frustrate the purpose of Koistinen et al. to make their desired products, i.e., acid functional polyols.

Housel et al. is concerned with the production of carboxyl-containing polyol compositions, but there is nowhere in Koistinen et al. that discloses the polyol esters produced by employing acid catalysts contain carboxyl groups. On the contrary, Koistinen et al. suggest that the desired polyol esters do not contain acid pendant groups.

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U.S. Serial No. 09/996,480
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4 of 4

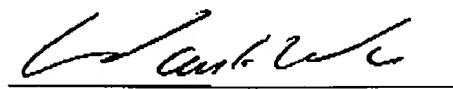
The gist of the Koistinen reference is that the desired polyol esters can be easily separated from the unreacted acid starting materials by adding a tertiary amine to the reaction mixture and subsequently extracting the formed acid-amine salt into an aqueous solution. See Koistinen page 2, lines 4-9 and page 11, claim 1. If the desired polyol ester produced by the Koistinen process by employing an acid catalyst has any carboxyl (acid) functional group, the desired polyol ester will form a salt with this tertiary amine and as a result will be extracted into the aqueous solution too. Then there will not be any separation of the desired products and the impurities. This indicates that the desired polyol esters formed by Koistinen et al. process do not contain acid pendant groups.

In view of this teaching, a person skilled in the art, looking to make polyols containing acid pendant groups, won't be led to employ any acid catalyst disclosed in Koistinen et al. because Koistinen et al. indicates that if an acid catalyst is used in a reaction between polyol and carboxylic acids/anhydrides, the produced polyols will not contain any carboxylic functional groups. Accordingly, there is no proper motivation for a person of ordinary skilled in the art to incorporate the acid catalysts disclosed in Koistinen et al. into the process of Housel et al.

Reversal by the Board of the outstanding rejections of the instant claims is respectfully requested. No additional fee is believed to be required; however, if there is any fee, please charge Deposit Account 23-1665 under Customer Number 27267.

Respectfully submitted,
Indulis Gruzins et al.

Date: July 28, 2008


Wanli Wu
Reg. No. 59,045

WIGGIN & DANA LLP
One Century Tower
New Haven, CT 06510-1832
Telephone: (203) 498-4317
Facsimile: (203) 782-2889
Email: www@wiggin.com

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